5.0 ENVIRONMENTAL CONSEQUENCES

5.1 INTRODUCTION

This section will identify and analyze potential environmental impacts that may result from implementation of the Proposed Action (Implement the Land Use Plan for Fort Detrick, Maryland) or the alternative (Do Not Implement the Land Use Plan for Fort Detrick, Maryland, No Action). Such an analysis entails detailing the potential impacts associated with the implementation of the Proposed Action or the alternative that are reasonably foreseeable, but may not necessarily occur. The term “consequence” refers to the results of an event or events without consideration of probability. Where possible and appropriate, potential events will be characterized both in terms of their potential consequence and the probability that they will occur. Consequences of the Proposed Action and the alternative on the public, on the workforce, and the environment will be considered. Direct, indirect, and cumulative effects also will be considered.

Section 5.2 discusses potential impacts to the affected environment associated with the implementation of the Proposed Action and the mitigation measures that would be applied. Section 5.3 and Section 5.4 present a comparison of the potential environmental impacts associated with the Proposed Action and the No Action Alternative.

5.2 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

5.2.1 Land Use

Several changes to the land use patterns in Area A and Area B will result from the projects comprising the Proposed Action. As noted in Section 2.5, these changes will reduce the overall acreage of designated agricultural land on Area A and increase the acreages for administrative, community services, research and development, and natural resources purposes. These changes have been reviewed in accordance with the planning procedures discussed in Section 4.1.2.1 and incorporated into the Installation’s current Land Use Plan. Implementation of the Proposed Action will collocate similar activities on Fort Detrick. New construction will be sited in areas designated for that particular use. Adjoining land uses will be separated by narrow forest buffers as described in Section 2.5.7. Therefore, the Proposed Projects will be compatible with their respective adjoining land uses.

Land use impacts related to construction and demolition activities could potentially occur from excessive erosion during this phase of the Proposed Action. These impacts would be temporary, site-specific, and minor. Application of BMPs during construction and demolition, as discussed in Section 2.7.4, will prevent excessive erosion from the designated project sites. Runoff from the construction and demolition sites may potentially impact those areas of the Installation due to erosion or sedimentation. During construction and demolition, compliance with erosion and sediment control and stormwater management standards as determined by the MDE will be required for most of the facilities (see Section 2.7.4).

During the operational phase of the Proposed Action, land use impacts would be minor and site-specific. Implementation of the new construction projects comprising the Proposed Action would increase the area covered by impervious surfaces and increase the total volume of surface runoff in the immediate vicinity of the proposed new construction sites. During operations, compliance with stormwater management standards as determined by the MDE will be required for most of the facilities (see Section 2.7.4). In addition, Fort Detrick Regulation 420-74, *Facilities Engineering - Storm Water Management*, requires that stormwater management practices and control measures must be implemented to mitigate any significant adverse impacts.

Implementation of Alternative II (No Action) would eliminate the minor impacts to land use associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan.

5.2.2 Climate

Potential impacts to climate and air quality are discussed in Section 5.2.8.

5.2.3 Geology

Potential impacts to geologic and soil resources are discussed in Section 5.2.4.

5.2.4 Soils

The impact on soil resources during the construction and demolition phase of the Proposed Action will be minor. Some soils will be disturbed during excavation and installation of utility lines and regrading. As discussed in Sections 2.7.4, application of BMPs during construction will prevent excessive erosion from wind and precipitation events.

During the operational phase, the impact on soil resources will be negligible. The Proposed Action does not involve the handling of toxic or hazardous materials or other activities that would be harmful for soil resources.

Implementation of Alternative II (No Action) would eliminate the minor impacts to soils associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan.

5.2.5 Water Resources

No significant adverse impacts to water resources will result from the construction and operation of the proposed facilities at the proposed sites, provided BMPs are utilized. Potential impacts to surface water could result if excessive sediments from the site entered the Nallin Farm Pond, Carroll Creek, or the unnamed Monocacy River tributaries noted in Section 4.5.1. Appropriate use of BMPs during the construction and demolition phase will mitigate this potential impact, as discussed in Section 2.7.4.

The Proposed Action will result in demolition of 23 buildings with a combined area of approximately 152,000 gsf and construction of 4 buildings with a combined area of approximately 169,000 gsf, a small net increase in the total impervious area within Area A of Fort Detrick. Therefore, stormwater runoff from the new-construction sites will be increased during the operational phase of the Proposed Action. Adherence to standards for stormwater management as determined by the MDE will mitigate this potential impact, as discussed in Sections 2.7.4.

Groundwater protection is mandated by EPA regulations issued under the *Resource Conservation and Recovery Act* (40 CFR 261-270), the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) (40 CFR 300-399), and the *Safe Drinking Water Act* (SDWA) (40 CFR 144). The SDWA requires state agencies to identify and protect critical aquifer areas. Groundwater resources could be impacted during the construction and demolition phase of the Proposed Action if the aquifer were penetrated by excavation activities. Operation of the proposed new facilities will involve limited use of toxic or hazardous materials (i.e., materials normally associated with administrative and recreational activities). Sanitary sewer connections for new facilities will be installed in accordance with relevant building codes and Fort Detrick regulations. Existing sanitary sewers will be abandoned or decommissioned in accordance with relevant Federal, state, and Fort Detrick regulations.

Implementation of Alternative II (No Action) would eliminate the minor impacts to water resources associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan.

5.2.6 Wetlands

Federal activities within floodplains and wetlands are restricted under EO 11988, 33 CFR 1977 and EO 11990, and AR 415-15. Wetlands are considered to be environmentally sensitive resources (AR 200-2, Section 651.29(c)). The INRMP for Fort Detrick serves as a guide for the management and protection of wetlands at Fort Detrick to be in accordance with AR 200-3, CFR Chapter 9, and other applicable laws and regulations (USAG, 2001b).

Wetland areas are an important component of the Installation's natural resources. Protected wetlands provide habitat for wildlife species at Fort Detrick. According to the INRMP, riparian buffer zones between wetland areas, streams, ponds, and adjacent land uses should be provided and maintained for wildlife habitat and erosion control. To delay sediment loading, land use in the vicinity of these wetland habitats should remain compatible with their protection (USAG, 2001b).

The Proposed Action may temporarily impact W-5 on Area A during the construction of the Nallin Farm Recreation Park and the expansion phase of this wetland. Land grading activities within the Nallin Farm Recreation Park may increase soil erosion and runoff to this wetland area. BMPs such as sediment control (e.g., silt fencing) and fugitive dust control will mitigate adverse impacts to this area.

Implementation of the Proposed Action will result in positive impacts to wetlands. The expansion of wetland W-5 will include the addition of trees and shrubs along the existing drainage swale that leads to the wetland. The increase of the wetland by 1.06 acres will provide much-needed diverse habitats, and further enhance the natural resource areas on Area A.

Implementation of Alternative II (No Action) would eliminate the positive impacts to wetlands associated with the Proposed Action.

5.2.7 Plant and Animal Ecology

Local plant and animal ecology at the proposed sites could be negatively impacted during construction of the Proposed Action through the destruction of habitat from fugitive dust, erosion, and noise. Utilization of BMPs relevant to fugitive dust, erosion control, and noise will mitigate negative impacts to the local plant and animal ecology during the construction phase of the Proposed Action.

Changes in the forestation areas within Area A and Area B might uproot some established species temporarily. To mitigate possible loss in grassland species, select areas will no longer be mowed which may increase diversity in this ecological system.

Despite the loss in grassland areas, the eventual addition of forest will eventually increase the diversity of wildlife that inhabits Fort Detrick. The forest blocks that will be established on Areas A and B will also be connected to each other through buffer zones approximately 35 feet in width which will allow protected passage between forest blocks for certain species of wildlife. This action will decrease forest fragmentation, which can lower diversity within a forest system, and will result in the creation of high quality habitat for wildlife.

Implementation of the Proposed Action will likely disturb the plant and animal ecology in the immediate area of the new facilities. Although the Installation is not frequented by special status species, the construction and utilization of the facilities will discourage some species, particularly birds and deer, from the area through habitat destruction. In accordance with the State Forest Conservation Program (COMAR 08.18.04), forestation will be required for the Proposed Action (see Section 2.7.5). The total amount of land disturbed for the proposed activities is approximately 2,163,678 sf (49.67 acres). The total amount of land that that qualifies for reforestation is approximately 7.09 acres. The reforestation of previously determined locations on Fort Detrick will be funded at the project proponents' expense.

Implementation of Alternative II (No Action) would eliminate the minor impacts to grassland ecosystems associated with the Proposed Action, but would also eliminate the significant ecological benefits resulting from increased forestation.

5.2.8 Air Quality

During the construction and demolition phase of the Proposed Action, local air quality of Frederick could be impacted by fugitive dust emissions, by construction vehicle emissions, and by vehicular emissions from commuting activities of the workforce and suppliers. These impacts will be temporary and minor. Adherence to BMPs will mitigate potential fugitive dust emissions during construction and demolition. The vehicular emissions will likely be an insignificant portion of the total transportation related emissions in the Frederick area.

Impacts to local air quality during operation of the Proposed Action will be negligible. The Proposed Action does not involve large fuel-burning equipment or other pollutant emission activities that would require a NSR/PSD review in accordance with the CAA (see Section 2.7.3). Vehicular emissions from workforce commuting and supplier delivery activities would not be

increased due to the Proposed Action. Because implementation of the Proposed Action will mitigate traffic congestion on-post and off-post, vehicular emissions may decline.

Implementation of Alternative II (No Action) would eliminate the negligible impacts to air quality associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan.

5.2.9 Historical and Cultural Resources

The NHPA of 1966, as amended (Public Law [PL] 89-665), mandates national policy for protection and restoration of significant historic, architectural, archeological, or cultural resources. The 1980 amendments to the act provide for historic preservation costs to be included in project planning and budgeting. The DA implements the NHPA through NEPA, AR 200-2, and AR 200-4, *Cultural Resources Management*. The State Historic Preservation Officer (SHPO) is primarily responsible for ensuring adherence to the NHPA.

Construction/demolition and subsequent use of the facilities could impact significant historic, cultural, or archeological resources if the Proposed Action were conducted near significant sites and in a manner which altered, lessened, or disturbed these resources. Potential adverse impacts due to construction activities at all sites would be minor and mitigable by adherence to BMPs.

Construction of the Nallin Farm Recreation Park could cause additional sediment loading into the Nallin Farm Pond from airborne particulate matter. BMPs such as silt fencing and dust control will mitigate these adverse impacts during construction.

A buffer of trees will be planted around the Nallin Farm Recreation Park which will help to mitigate adverse affects (e.g., airborne particulate matter) from the operation of the Nallin Farm Recreation Park (i.e., baseball diamonds, grill smoke) and from the possible construction of the HCCC in the northeastern corner of Area A (directly to the north of the Nallin Farm area).

The One-million liter test sphere is located approximately 260 ft from the nearest building to be demolished as part of this Proposed Action (Building 820 within the 800-series). The demolition of the buildings will cause an increase in fugitive dust which can cause damage to significant historical structures. The test sphere is nested in between several buildings, which help protect it from pollution damage. BMPs such as fugitive dust control must be in effect during the demolition phase of the Proposed Action to mitigate any adverse affects to this historical resource.

The overall potential impact of the Proposed Action on historical and cultural resources will be beneficial. The interpretive trail and Nallin Farm Recreation Park will enhance the Wide Pastures Area and the Nallin Farm area, respectively (see Sections 2.5.7 and 4.9). All other historical and cultural resources are distant to the Proposed Action and therefore are unlikely to be adversely impacted (see Section 4.9).

Implementation of Alternative II (No Action) would eliminate the potential minor impacts to historical and cultural resources associated with the Proposed Action, but would also eliminate the benefits to historical and cultural resources.

5.2.10 Socioeconomic Environment

Positive impacts to the local economy will occur during the construction and demolition phase of the Proposed Action. Local vendors and construction contractors will benefit from the work. Minority and/or low-income communities could be economically impacted if they are excluded from the economic benefits arising from construction activities. All vendors and contractors participating in the construction phase of the Proposed Action will be required to adhere to Equal Opportunity Employment and Affirmative Action considerations as identified in 29 CFR 1608.1.

The overall potential impact on the socioeconomic environment during operation of the Proposed Action will be beneficial. The proposed community service project (Child Development Center) and recreational projects (Nallin Pond Recreational Park, Community Park, and indoor pool addition) will benefit residents of the Installation and commuting workforce (see Sections 2.5.6, 2.5.7, and 4.10). Potential adverse impacts due to construction activities at these sites would be minor and mitigable by adherence to BMPs. None of the Proposed Action will encroach upon existing or planned military housing areas or upon the nearest residences outside the Installation.

Implementation of Alternative II (No Action) would eliminate the positive impacts to the local economy associated with the Proposed Action.

5.2.11 Housing

Temporary minor impacts may occur to current residents of Fort Detrick during construction and demolition activities. These impacts will be transitory in nature. Adherence to appropriate BMPs regarding fugitive dust and noise will mitigate these potential impacts.

As discussed in Section 5.2.10 above, positive impacts to housing will result from implementation of the Proposed Action. Residents of Fort Detrick will benefit during the operational phases of the projects. Internal traffic congestion will be lessened, security will be increased, and improvements in recreational opportunities and enhancement of educational facilities for school age children are expected with implementation of the Proposed Action.

Implementation of Alternative II (No Action) would eliminate the temporary minor impacts to housing associated with the Proposed Action, but would also eliminate the benefits to the residents of Fort Detrick resulting from implementation of the Land Use Plan.

5.2.12 Noise

Excessive noise levels from construction and demolition activities or from operation of the proposed new facilities could impact the health of the workforce and the public, and possibly affect the local wildlife, as discussed in Section 4.12.

Temporary local increases in the noise level will occur at or near the site during the construction and demolition phase of the Proposed Action. Adherence to OSHA construction-noise standards (29 CFR 1926.52) will protect the workforce from excessive noise.

Operational activities at the proposed new facilities do inherently create noise. Therefore, the noise levels during the operational phase of the Proposed Action are not likely to increase over current levels.

Implementation of Alternative II (No Action) would eliminate the negligible impacts to noise levels associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan.

5.2.13 Odors

Odors, such as those generated by construction vehicles, may occur during the construction and demolition phase of the Proposed Action. The impacts of such odors on the workforce or residents would be transitory, localized, and negligible to minor. The proposed new facilities are similar to existing facilities elsewhere at Fort Detrick and do not involve significant odor sources. Thus, odor impacts during the operational phase of the Proposed Action will be negligible, since the odors would not be significantly different from those currently experienced on the Installation.

Implementation of Alternative II (No Action) would eliminate the negligible to minor impacts to odors associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan.

5.2.14 Transportation

Construction vehicles, commuting activities of the construction workforce, and supplier deliveries of construction materials may interfere with normal roadway transportation within Fort Detrick and in adjacent off-post areas during the construction and demolition phase of the Proposed Action. The impacts on traffic congestion will be transitory, localized at the work sites, and negligible to minor.

The overall potential impact of the Proposed Action on transportation will be positive during the operational phase. Six of the Proposed Projects will improve transportation systems within Fort Detrick, including the Biomedical Research Campus infrastructure (roadways), Main Gate Reconfiguration, Area A Gate Upgrades, Vehicle Inspection Station, HOT Dome and RV Parking Lots, and Barracks Parking Lots (see Sections 2.5.3 and 4.14). These improvements will facilitate movement of traffic and reduce queuing on-post and off-post.

Furthermore, the Proposed Action will not add to traffic volumes during the operational phase since they will be no increase in either the workforce or the resident population of Fort Detrick. USAG and the USACOE-Baltimore District performed an Installation-wide transportation study to document and characterize traffic conditions and to develop recommendations to improve overall traffic in and around the Installation (STV, Inc. 2003b). Because of recent growth throughout the area, six intersections are currently operating at an unacceptable Level of Service (LOS). Implementation of the Proposed Action is expected to mitigate future adverse impacts to traffic conditions on and off the Installation. As part of the Proposed Action, Fort Detrick will be performing major gate improvements at three locations, including the Main Gate, Opossumtown Gate, and Old Farm Gate. The improvements proposed at these locations will result in more efficient operation of Fort Detrick's gates, which will mitigate current traffic problems (i.e., queuing).

Future growth in the Frederick area will add to the traffic burden in the region. Nine intersections are projected to operate at an unacceptable LOS in 2007 with the infrastructural improvements called for by the Proposed Action. The following intersections will operate at an unacceptable LOS:

- Rosemont Avenue and Montevue Lane: LOS F during the PM peak hour.
- Rosemont Avenue and Military Road/Baughmans Lane: LOS F during both the AM and PM peak hours.
- Rosemont Avenue and US 15 SB Ramps/Taney Avenue: LOS F during the PM peak hour.
- Rosemont Avenue and US 15 NB Ramps/Second Street: LOS F during both the AM and PM peak hours.
- Seventh Street and Schley Avenue/Shopping Center: LOS E during AM peak hour and LOS F during the PM peak hour.
- Seventh Street and US 15 SB Ramps/Biggs Avenue: LOS F during the AM peak hour and LOS E during the PM peak hour.
- Opossumtown Pike and Thomas Johnson Drive: LOS E during the PM peak hour.
- Opossumtown Pike and US 15 SB Ramps: LOS E during the AM peak hour and LOS F during the peak hour.
- Motter Avenue and US 15 NB Ramps/Pinewood Drive: LOS E during both the AM and PM peak hours.

Improvement projects to roadways in Frederick, which have been identified within the analysis timeframe, will not accommodate the projected increase in demand (STV, Inc., 2003b). With the inclusion of traffic anticipated from the potential development activity at Fort Detrick (Concurrent Projects and Conceptual Projects), nine intersections will operate at an unacceptable LOS:

- Rosemont Avenue and Montevue Lane: LOS F during the PM peak hour.
- Rosemont Avenue and Military Road/Baughmans Lane: LOS F during both the AM and PM peak hours.
- Rosemont Avenue and US 15 SB Ramps/Taney Avenue: LOS F during the PM peak hour.
- Rosemont Avenue and US 15 NB Ramps/Second Street: LOS F during both the AM and PM peak hours.
- Seventh Street and Schley Avenue/Shopping Center: LOS F during both the AM and PM peak hours.
- Seventh Street and US 15 SB Ramps/Biggs Avenue: LOS F during both the AM and PM peak hours.
- Opossumtown Pike and Thomas Johnson Drive: LOS E during the PM peak hour.
- Opossumtown Pike and US 15 SB Ramps: LOS F during both the AM and PM peak hours.
- Motter Avenue and US 15 NB Ramps/Pinewood Drive: LOS F during both the AM and PM peak hours.

Table 5-1. Fort Detrick's Potential Contribution to Future Intersection Loadings.

INTERSECTION	AM PEAK % INCREASE	PM PEAK % INCREASE
Rosemont Avenue and Montevue Lane	[1]	2.76%
Rosemont Avenue and Military Road/Baughmans Lane	2.91%	5.08%
Rosemont Avenue and US 15 SB Ramps/Taney Avenue	[1]	4.00%
Rosemont Avenue and US 15 NB Ramps/Second Street	8.89%	0.73%
Seventh Street and Schley Avenue/Shopping Center	25.42%	12.94%
Seventh Street and US 15 SB Ramps/Biggs Avenue	23.68%	20.39%
Opossumtown Pike and US 15 SB Ramps	10.29%	8.28%
Motter Avenue and US 15 NB Ramps/Pinewood Drive	11.61%	6.79%

[1] Operates at an acceptable LOS

Fort Detrick's contribution to these intersections is provided in Table 5-1. The potential development at Fort Detrick (Concurrent Projects and Conceptual Projects) will contribute to future off-post deficiencies. Nine intersections are projected to operate at an unacceptable LOS under total conditions. Fort Detrick contributes to the intersections with an unacceptable LOS as there is a moderate impact at intersections along Seventh Street and Opossumtown Pike. Due to upgrades programmed along Rosemont Avenue, however, the Fort Detrick impact is minor. Continuing study of the traffic impact of internal roadways will be conducted by USAG to comprehensively evaluate the most efficient use of available resources in addressing future transportation needs. The unacceptable LOS at these intersections suggests that the City of Frederick and the Maryland State Highway Administration (SHA) should investigate long-term solutions to improve the major corridors within the study area.

Implementation of Alternative II (No Action) would eliminate the minor positive impacts to traffic congestion in and around Fort Detrick associated with the Proposed Action.

5.2.15 Security

The Proposed Action includes a number of projects (reconfiguration of the Main Gate, the Old Farm Gate, and the Opossumtown Gate, reconfiguration of some parking lots, and construction and operation of a vehicle inspection station). The environmental impacts associated with the installation of the security upgrades are likely to be negligible to minor, transitory, and mitigatable.

Operation of the security upgrades will result in negligible environmental impacts and will result in improved security for the workforce and residents of Fort Detrick. Implementation of the Proposed Action will improve the security of the workforce and residents of Fort Detrick in addition to the positive impacts to traffic flow.

Implementation of Alternative II (No Action) would eliminate negligible to minor impacts associated with the Proposed Action, but would also eliminate the positive impacts to security for the workforce and residents of Fort Detrick associated with the Proposed Action.

5.2.16 Energy Resources

Energy resources could be adversely impacted if construction and demolition activities consumed excessive quantities of energy. This energy consumption will have a temporary and minor impact, since it would comprise a small fraction of energy consumption in the Frederick area.

As discussed in Sections 2.7.6 and 2.7.7, no net increase in energy consumption is anticipated with implementation of the Proposed Action. The Proposed Project for MEDLOG Relocation, USAMRMC Headquarters Building, Replacement of Building 1686, and the Child Development Center will replace 23 antiquated and energy inefficient facilities (approximately 152,000 gsf) with 4 new modern facilities (approximately 169,000 gsf). An accurate quantitative determination of the impact on requirements for electricity, water supply, natural gas, and steam is not feasible at the current state of design and planning for these projects. However, a reasonable qualitative estimate is possible. The operational activities in these facilities are not energy intensive, and the workforce will not increase. On that basis, energy consumption in the new facilities should not increase significantly and potentially may be less than current levels.

Implementation of Alternative II (No Action) would eliminate the minor impacts to energy consumption in the construction/demolition phase associated with the Proposed Action, but would also eliminate the benefits resulting from operation of energy efficient facilities.

5.2.17 Waste Streams

During the construction and demolition phase of the Proposed Action, the contractors will be responsible for disposal of wastes generated by their activities in accordance with all applicable regulatory and legal requirements, as noted in Section 2.7.1. The contractors will not be allowed to use Fort Detrick's facilities for waste disposal. On that basis, the potential environmental impacts of waste streams during construction and demolition will be negligible.

As noted in Section 2.7.8, implementation of the Proposed Action is not anticipated to change the qualitative or quantitative aspects of the waste streams from Fort Detrick. The Proposed Action does not involve increases to the work force or the residents of Fort Detrick. Operation of the proposed new facilities will involve limited use of toxic or hazardous materials (i.e., materials normally associated with administrative and recreational activities). The impacts to waste stream management associated with the operational phase of the Proposed Action will be negligible.

Implementation of Alternative II (No Action) would eliminate the negligible impacts to waste stream management associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan.

5.2.18 Public Opinion

Public opinion towards a Proposed Action must be considered to the maximum extent practicable in accordance with NEPA and AR 200-2. Evaluation of public opinion includes an assessment of national and/or local perception of issues. As part of the NEPA process, public comments are being solicited and encouraged.

5.2.19 Human Health and Safety

Negative impacts to human health and safety may occur both during construction/demolition and operation of the Proposed Action. Potential impacts to the health and safety of construction workers will be minimized by adherence to accepted work standards and OSHA regulations (29 CFR Part 1926, *Safety and Health Regulations for Construction*). Operation of the facilities will be governed by the *Army Safety Program* (Army Regulation 385-10), implementing, by reference, all applicable Federal, state, local, DoD, and DA requirements. The risk to the workforce, residents of Fort Detrick, and public health from the proposed activities is negligible.

Implementation of Alternative II (No Action) would eliminate the negligible impacts to human health and safety associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan (see Sections 5.2.10, 5.2.11, and 5.2.15).

5.2.20 Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low Income Populations*, requires Federal agencies to consider whether their projects will result in disproportionate adverse impacts on minority or low-income populations. The U.S. Census defines the poverty level as the income level (based on family size, age of householder, and the number of children less than 18 years of age) that is considered too low to meet essential living requirements without regard to the local cost of living. The U.S. Census considers a poverty area as an area in which at least 20 percent of the population lives below the poverty level. As discussed in Section 4.10, the Frederick area is not considered a poverty area. It is unlikely that the Proposed Action will have proportionately greater impact on disadvantaged (e.g., minority, low income) populations.

5.2.21 Cumulative Impacts

The CEQ regulations implementing NEPA define cumulative impacts to the environment as those effects resulting from the impact of the Proposed Action when combined with past, present, and future actions (40 CFR 1508.7). Thus, cumulative impacts are the sum of all direct and indirect impacts, both adverse and positive, that result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of source. Cumulative impacts may be accrued over time and/or impacts in conjunction with other pre-existing effects from other activities in the area (40 CFR 1508.25).

The Proposed Action will not increase the workforce or the residents of Fort Detrick. As discussed below in Section 5.3, the vast majority of the environmental impacts will occur during the construction phase of the projects. These impacts will be negligible, minor, and transitory. Overall operational environmental impacts are deemed to be beneficial.

Activities qualitatively and quantitatively similar to the Proposed Action (i.e., infrastructural construction/improvement and utilization) have occurred on the Installation for nearly 60 years without evidence of adverse cumulative impacts to the environment. It is unlikely that significant cumulative impacts will result from implementation of the Proposed Action. Environmental impacts associated with future development on Fort Detrick will be reassessed in a NEPA context, including cumulative impacts (Concurrent Projects and Conceptual Projects).

Implementation of Alternative II (No Action) would eliminate the negligible cumulative impacts associated with the Proposed Action, but would also eliminate the benefits resulting from implementation of the Land Use Plan.

5.3 ALTERNATIVE I - IMPLEMENT THE LAND USE PLAN FOR FORT DETRICK, MARYLAND

As summarized in Table 5-2 and Table 5-3, no significant environmental impacts are anticipated with implementation of the Proposed Action.

Possible negligible to minor adverse impacts associated with construction include:

- potential minor impacts to soils;
- negligible impacts to water resources;
- minor impacts to wetlands;
- minor impacts to plants and animals;
- minor impacts to air quality;
- minor impacts to historical and cultural resources due to fugitive dust during construction;
- positive impacts to the local socioeconomic environment (the City of Frederick);
- minor impacts from noise;
- negligible impacts from odors;
- potential minor impacts to traffic off-post from construction vehicles;
- minor impacts to energy resources;
- negligible impacts to waste streams; and
- negligible impacts to human health and safety.

Possible negligible to minor adverse impacts, and positive impacts associated with operation include:

- minor adverse impacts (loss of agricultural land) and positive impacts (gain of forested land, consolidation of similar activities on the Installation, increased wetlands) to land use;
- negligible impacts to soils;
- positive impacts to wetlands;
- positive impacts to plant and animal ecology (creation of high quality habitat);
- negligible impacts to air quality;
- positive impacts to historical and cultural resources (protective tree buffers, interpretive trails);
- positive impacts to the Fort Detrick socioeconomic environment (residents of Fort Detrick);
- positive impacts to housing on Fort Detrick;
- negligible impacts from noise;
- negligible impacts from odors;
- positive impacts to traffic from gate reconfigurations and roadway expansions;
- positive impacts to security;
- negligible impacts to energy resources;
- negligible impacts to waste streams;

- possible minor impacts to nearby residents from nuisance lighting (ball fields and running track); and
- negligible impacts to human health and safety.

All of the potential adverse impacts resulting from the implementation of the Proposed Action were deemed to be negligible to minor and mitigatable, provided that BMPs are strictly adhered to during construction/demolition and operation of the proposed facilities.

Alternative I (the Proposed Action) is to Implement the Land Use Plan for Fort Detrick, Maryland. This alternative entails continuance of the proposed construction and operation activities on the Installation. Implementing Alternative I would allow USAG and its tenants to continue to advance their respective missions and will provide USAG with much-needed, upgraded facilities and is consistent with current Land Use Planning for the Installation.

Table 5-4 discusses mitigation measures which will be employed during the implementation of the Proposed Action. Application of BMPs during construction, demolition, and operation of the Proposed Action will mitigate adverse impacts to Fort Detrick and areas adjacent to the Installation.

5.4 ALTERNATIVE II - DO NOT IMPLEMENT THE LAND USE PLAN FOR FORT DETRICK, MARYLAND (NO ACTION)

Alternative II, the No Action alternative, is Do Not Implement the Land Use Plan for Fort Detrick, Maryland. This alternative entails discontinuance of the proposed construction and operation activities at Fort Detrick, Maryland. This alternative is not the preferred option because it would not allow USAG and its tenants to continue their missions and provide USAG with much-needed upgraded facilities and is not consistent with Land Use Planning for Fort Detrick. Implementation of the No Action Alternative would eliminate the negligible to minor adverse impacts detailed above, but would also eliminate the positive impacts resulting from the Proposed Action.

Table 5-2. Summary of Potential Environmental Impacts of the Proposed Action Related to Construction and Demolition.

Environmental Attribute	Potential Environmental Impacts Related to Construction and Demolition
Land Use	Temporary, site-specific and minor land use impacts due to erosion and stormwater runoff. Mitigated by adherence to BMPs and compliance with erosion and sediment control and stormwater management requirements.
Soils	Minor impacts to soil resources due to erosion resulting from disturbance during excavation and installation of utility lines. Mitigated by adherence to BMPs and compliance with sediment control and stormwater management requirements.
Water Resources	Minor impacts to surface water due to sedimentation. Mitigated by adherence to BMPs and compliance with sediment control requirements. Negligible impacts to groundwater. Mitigated by adherence to building codes and regulatory requirements for sanitary sewers.
Wetlands	Temporary minor Impacts due to erosion and sedimentation at the Nallin Farm Pond wetland expansion project. Mitigated by adherence to BMPs and compliance with sediment control requirements. Negligible impacts to other wetlands.
Plant and Animal Ecology	Temporary minor adverse impacts to plant and animal resources including displacement of species through disruption of habitat. No critical habitats will be altered.
Air Quality	Temporary and minor impacts due fugitive dust and vehicular emissions. Fugitive dust mitigated by adherence to BMPs.
Historic and Cultural Resources	Minor impacts to the Wide Pastures area. Mitigated by adherence to BMPs and SHPO recommendations. Negligible damage to other historical and cultural resources.
Socioeconomic Environment	Positive economic impact to the economy of Frederick. Negligible adverse impacts to residents of military housing on Fort Detrick.
Housing	Temporary minor impacts to current residents due to fugitive dust and noise. Mitigated by adherence to BMPs.
Noise	Transitory minor increased noise at the construction and demolition sites and adjacent off-post areas. Mitigated by adherence to OSHA construction-noise standards
Odors	Negligible odor impacts due to transitory and localized odors generated by construction vehicles.
Transportation	Transitory, minor impacts on traffic congestion localized at the work sites.
Security	Negligible to minor impacts to other attributes due to construction and demolition for security upgrade projects.
Energy Resources	Temporary minor impacts to depletable energy resources.
Waste Streams	Negligible impacts from waste streams.
Human Health and Safety	Potential minor impact to construction workers mitigated by compliance with OSHA construction safety regulations. Negligible impacts to public health and safety.
Environmental Justice	No disproportionate adverse impacts to minority or low-income populations are anticipated.
Cumulative Impacts	Significant adverse cumulative impacts are not anticipated.

THIS PAGE INTENTIONALLY LEFT BLANK

Table 5-3. Summary of Potential Environmental Impacts Related to Operation of the Proposed Action.

Environmental Attribute	Potential Environmental Impacts Related to Operation
Land Use	Minor to positive impacts to land use (loss of agricultural land; gain of forested land; collocation of similar activities on the Installation).
Soils	Negligible adverse impacts to soils.
Water Resources	Minor surface water impacts due to increased stormwater runoff. Mitigated by compliance with MDE and Fort Detrick stormwater management regulations. Negligible groundwater impacts.
Wetlands	Positive impact to the Nallin Farm Pond wetland. Negligible impacts to other wetlands.
Plant and Animal Ecology	Positive impact to plant and animal resources (creation of high quality habitat) by the forestation project. No alteration of critical habitats. Displacement of certain species, especially deer and birds, anticipated.
Air Quality	Negligible air quality impacts.
Historic and Cultural Resources	Positive impacts for the Wide Pastures area. Negligible adverse impacts for other historical and cultural resources.
Socioeconomic Environment	Beneficial impacts for residents of military housing from community service and recreational projects.
Housing	Positive impacts resulting from upgrading of infrastructural security and traffic, recreational facilities, and cultural facilities.
Noise	Negligible noise impacts. Noise levels are not likely to increase over current levels.
Odors	Negligible odor impacts. No significant new odor sources.
Transportation	Positive impacts to traffic from gate reconfiguration and roadway expansions.
Security	Beneficial impacts from security upgrade projects. Negligible adverse impacts to other attributes.
Energy Resources	Negligible impacts to energy resources. Energy consumption should not increase significantly and potentially may be less than current levels.
Waste Streams	Negligible impacts from waste streams.
Human Health and Safety	Negligible impacts to human health and safety.
Environmental Justice	No disproportionate adverse impacts to minority or low-income populations are anticipated.
Cumulative Impacts	Significant adverse cumulative impacts are not anticipated.

THIS PAGE INTENTIONALLY LEFT BLANK

Table 5-4. Summary of Mitigation Measures.

Potential Impact	Attributes Impacted		Mitigation Measures	Reference
	Direct Impacts	Indirect Impacts		
Mitigation of Environmental Impacts Related to Construction				
Excavation and Grading (erosion)	Soils	Land Use, Water Resources, Wetlands, Plant and Animal Ecology, Air Quality, and Historical and Cultural Resources	Adherence to BMPs and Compliance with MDE Sediment and Erosion Control Regulations	Sections 5.2.1, 5.2.4, 5.2.5, 5.2.6, 5.2.7, 5.2.8 and 5.2.9
Stormwater Runoff	Water Resources	Land Use	Adherence to BMPs and Compliance with MDE and Fort Detrick Stormwater Management Regulations	Section 5.2.1 and 5.2.5
Construction noise	Noise	Not applicable	Compliance with OSHA regulations	Sections 5.2.12 and 5.2.19
Injury Risk (workers)	Human Health and Safety	Not applicable	Compliance with OSHA regulations	Section 5.2.19
Mitigation of Environmental Impacts Related to Routine Operations				
Stormwater Runoff	Soils (erosion)	Water Resources	Permanent SMFs	Sections 5.2.4 and 5.2.5
Injury Risk (workers)	Human Health and Safety	Not applicable	Compliance with Army Safety Program Regulations	Section 5.2.19

THIS PAGE INTENTIONALLY LEFT BLANK